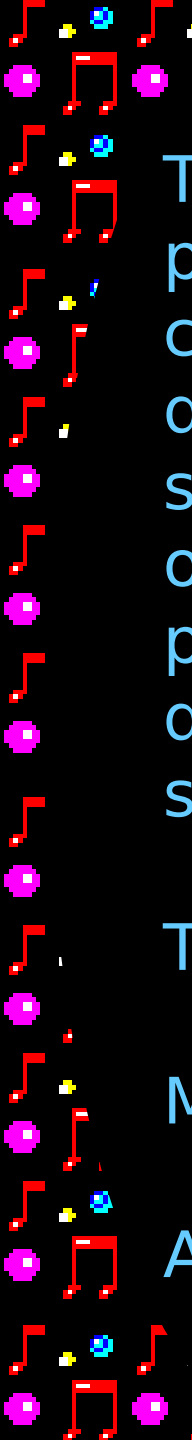


Sinonasal Pathology

Carol Adair, MD

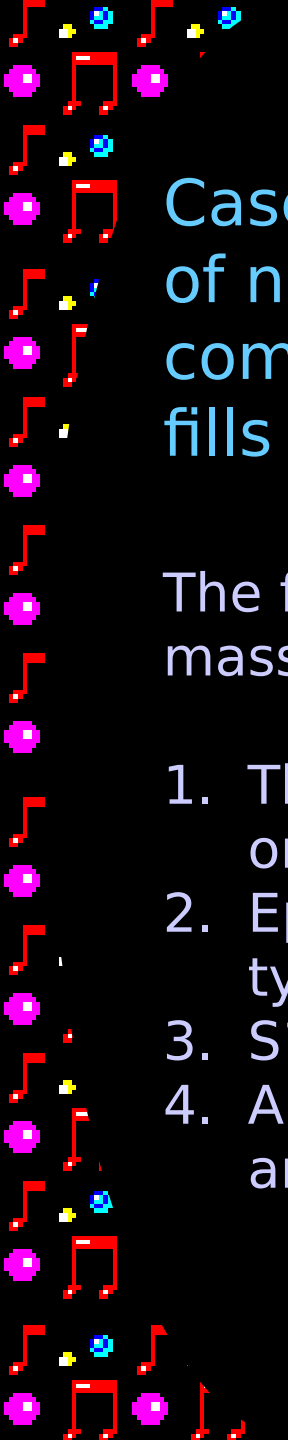


The following series of cases is presented in power point format. The first slide gives the clinical history and a multiple choice (type K) question (see below for answer options). The second and third slides are microscopic images of the lesion in question. The fourth slide presents the answer to the question. The diagnosis is given on the fifth slide, along with some key points.

Type K Question Format:

Multiple Choice:

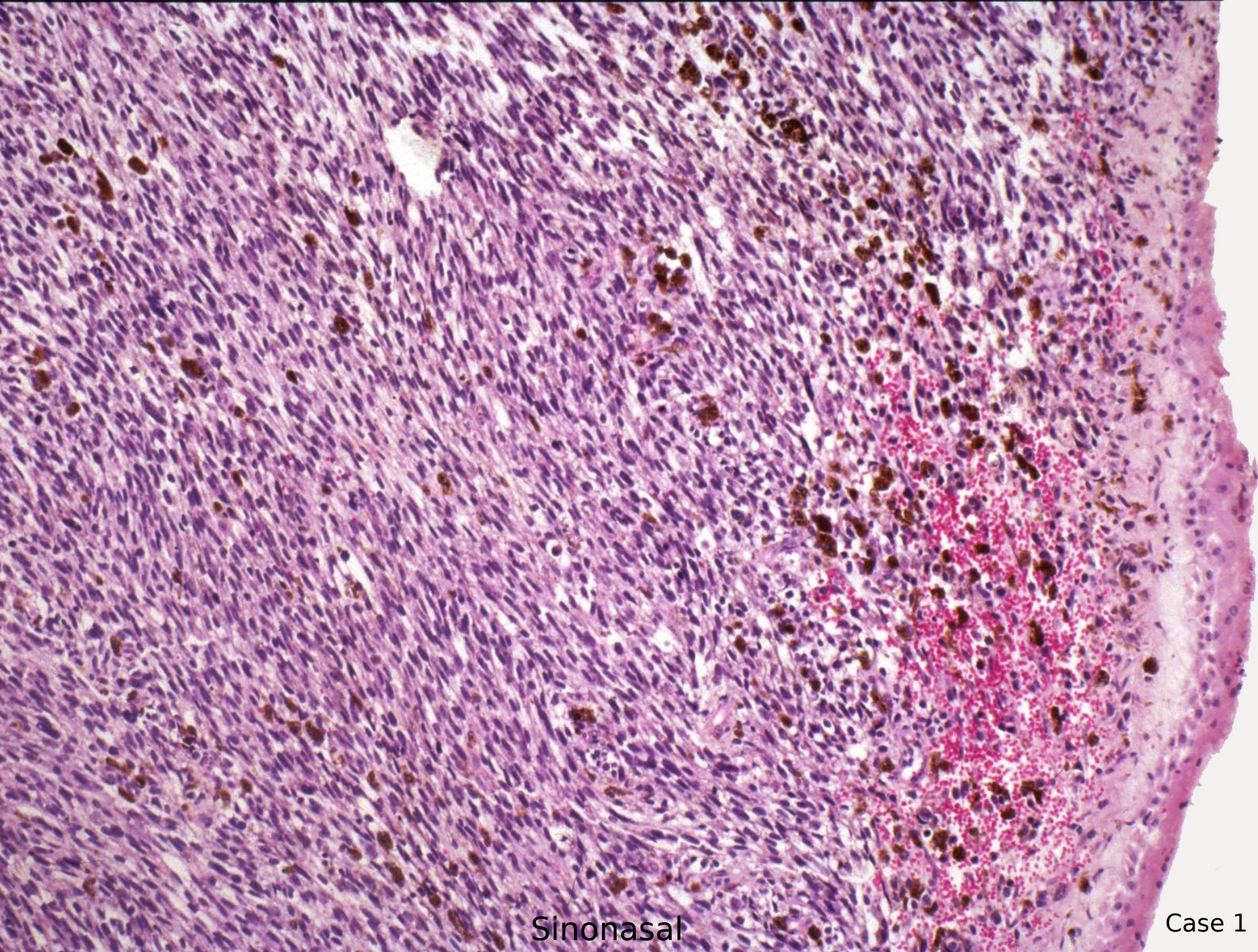
A=1,2,3 B=1,3 C=2,4 D=4 E=all



Case 1: A 70 year old male has had symptoms of nasal obstruction for several months, and now comes to the ER with epistaxis. A polypoid mass fills the right nasal cavity.

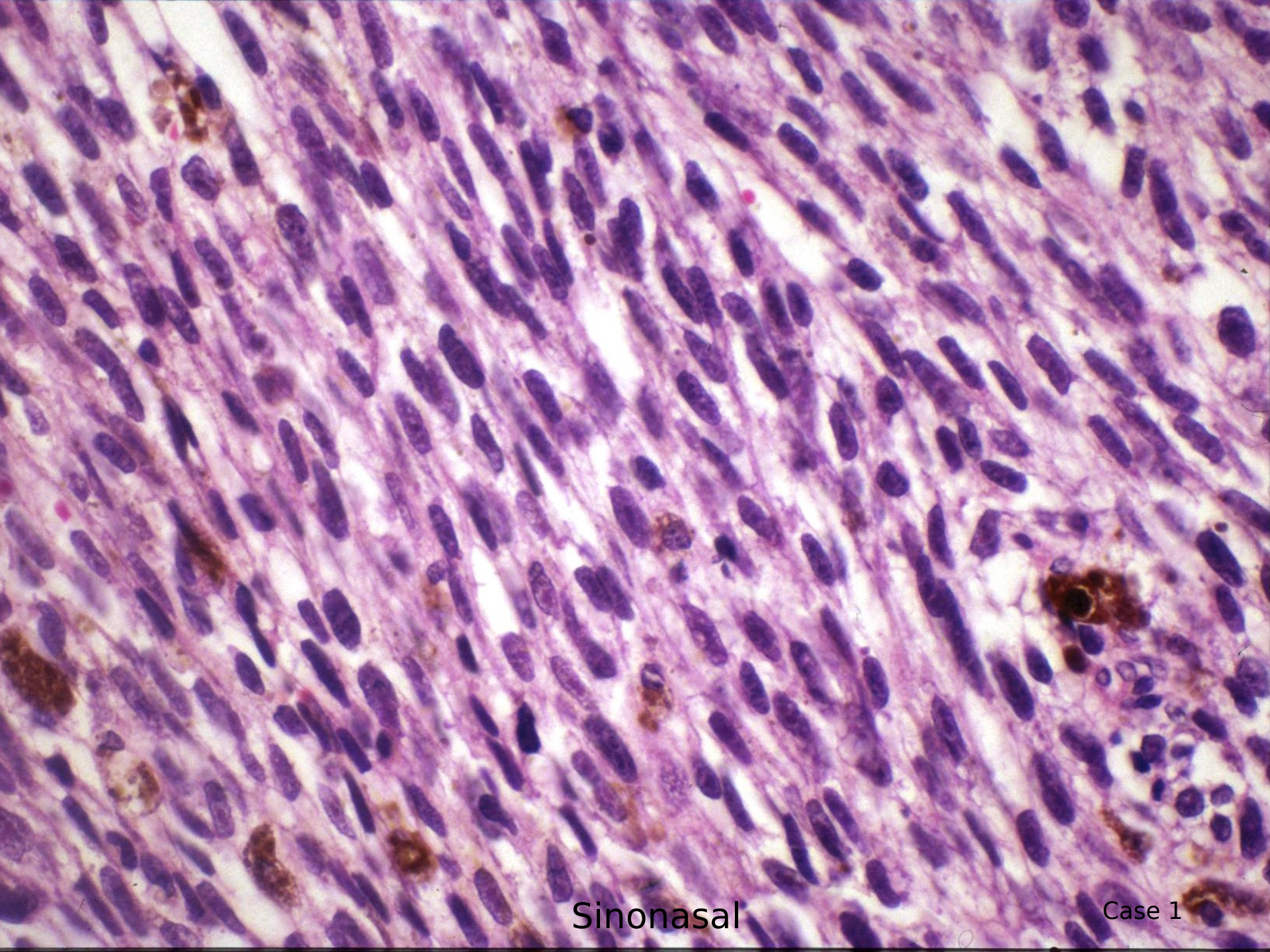
The following statements are true of this nasal cavity mass:

1. This lesion may represent either a metastatic or a mucosal primary lesion.
2. Epithelial immunohistochemical markers are typically positive.
3. S100 and possibly HMB 45 are positive.
4. Areas of squamous or glandular differentiation are common.



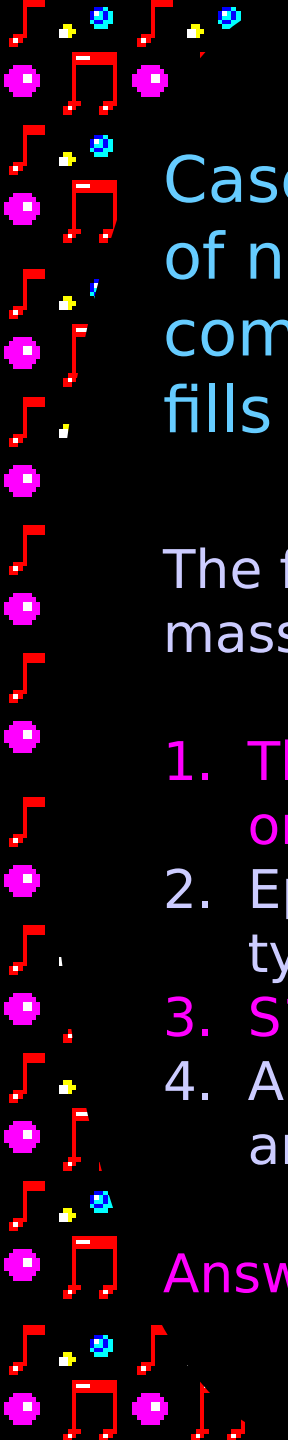
Sinonasal

Case 1



Sinonasal

Case 1



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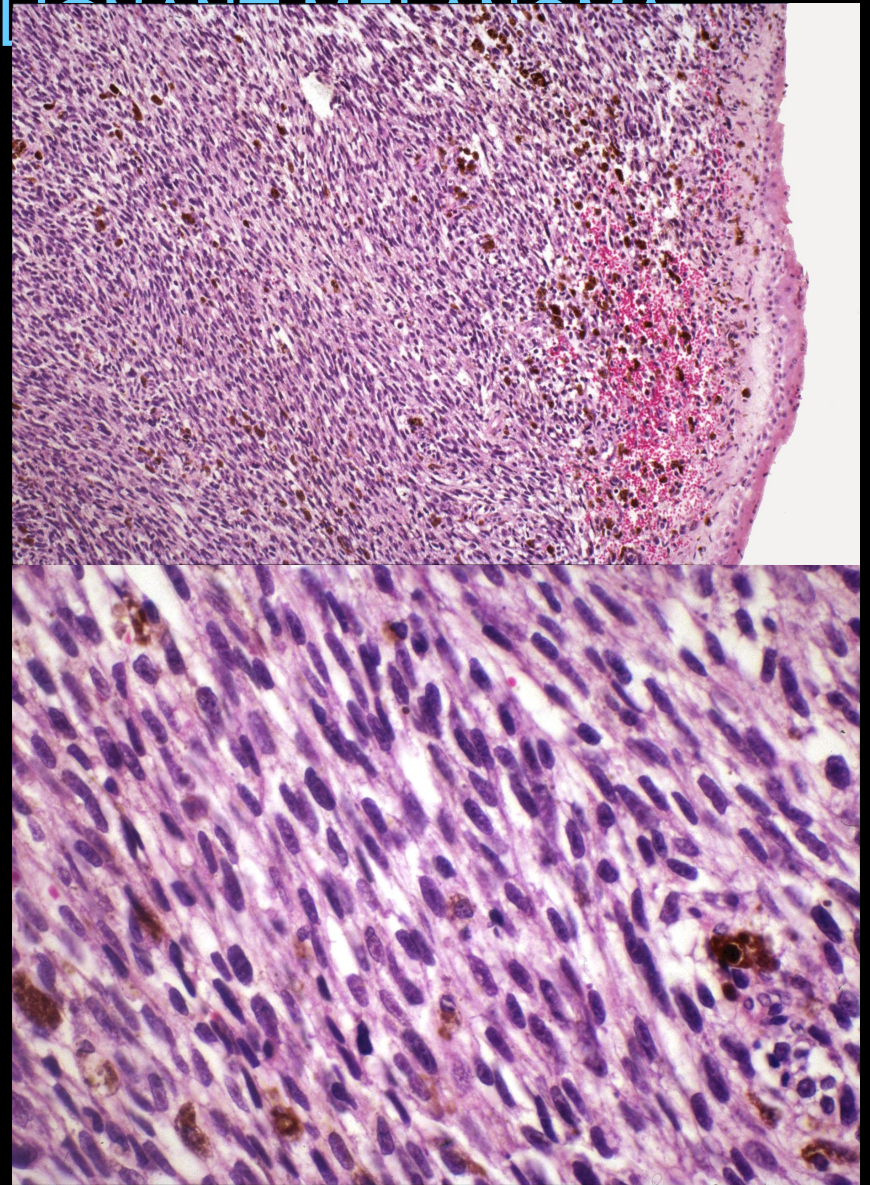
The following statements are true of this nasal cavity mass:

1. This lesion may represent either a metastatic or a mucosal primary lesion.
2. Epithelial immunohistochemical markers are typically positive.
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Answer: B

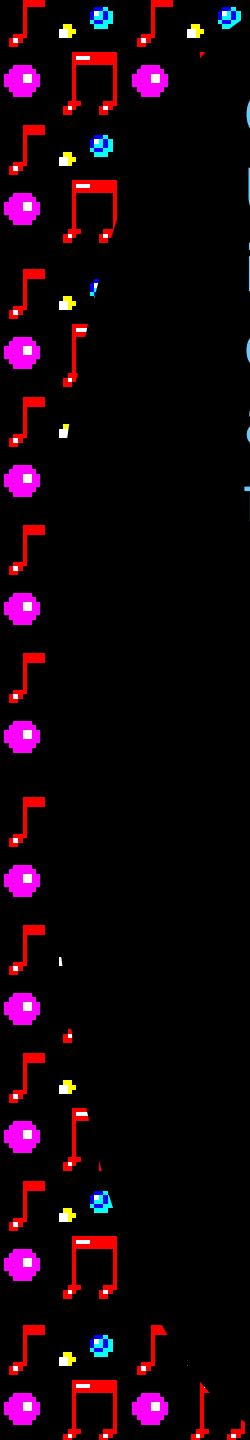
Case 1: SINONASAL MELANOMA

This case is relatively easy to recognize because of the brown melanin seen on H&E sections. Many melanomas will not have visible melanin and will require immunohistochemical markers such as S100 and HMB 45. HMB 45 is more likely to be present in epithelioid tumor cells than in spindle cells. Melanoma should always be in the differential dx of poorly differentiated malignancies in the upper respiratory tract, even in the middle ear space. A biphasic spindle and epithelioid pattern may be present and is suggestive of melanoma.



Sinonasal

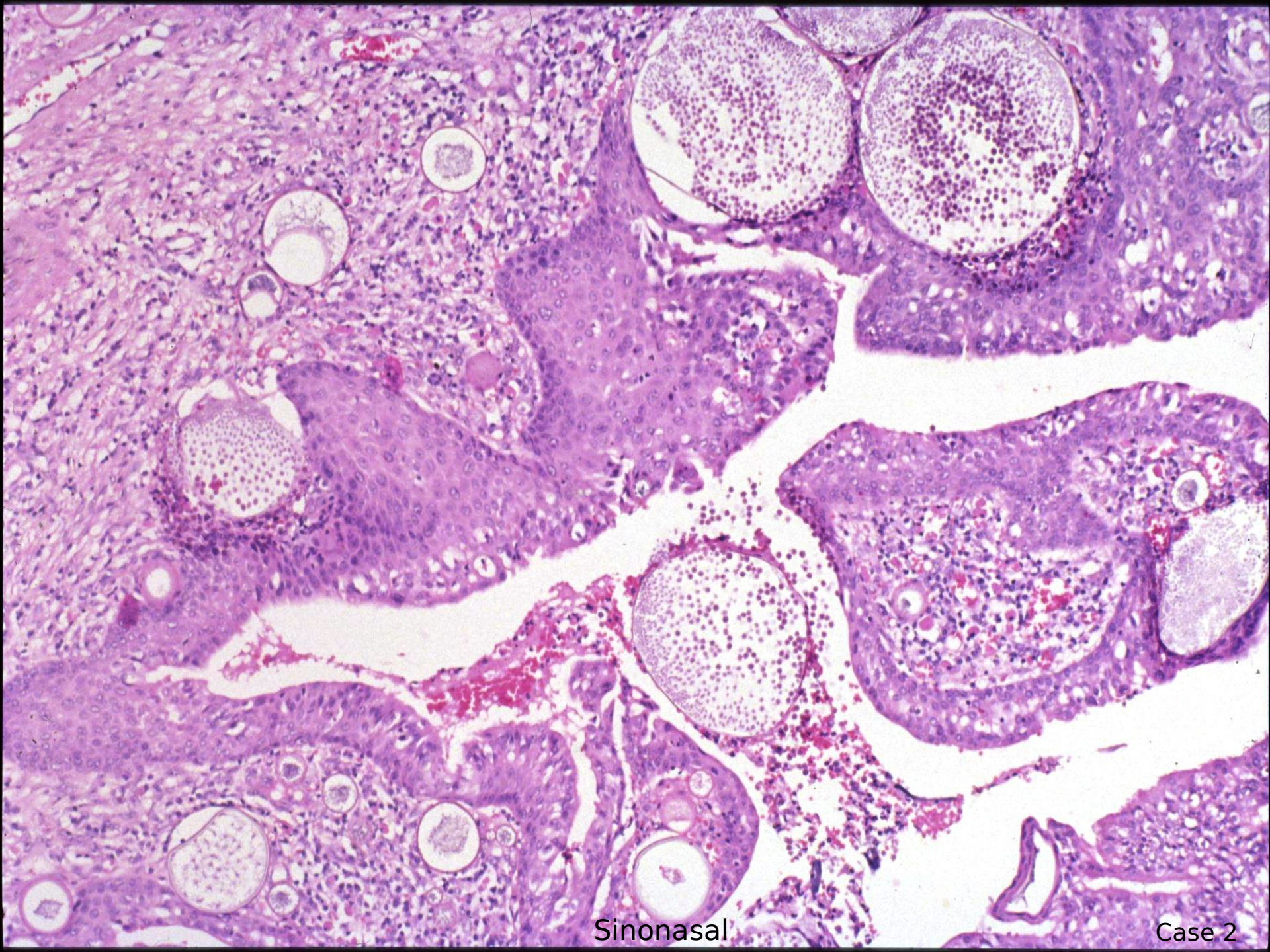
Case 1



Case 2: A 34 year old man emigrated to the United States a few years ago. He visits his internist because of progressive nasal obstruction. On examination both nasal cavities are filled with fleshy pink polypoid lesions arising from the septum and lateral nasal wall.

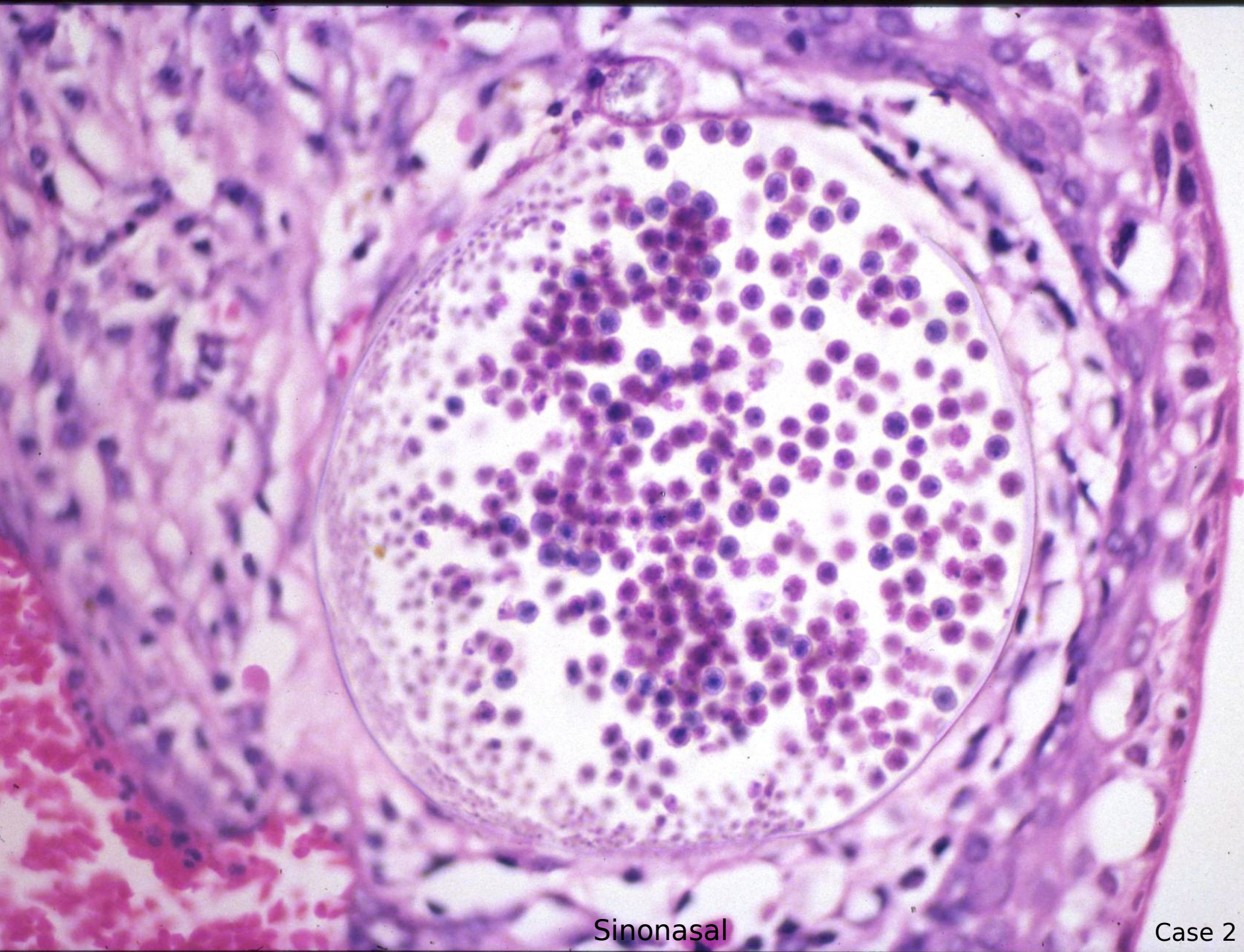
Which of the following statements are true of this lesion?

1. It is seen most often in patients in Northern Europe.
2. It may occur anywhere in the upper aerodigestive tract.
3. It is a neoplastic process and has a high rate of recurrence.
4. Antibiotic therapy is not effective.



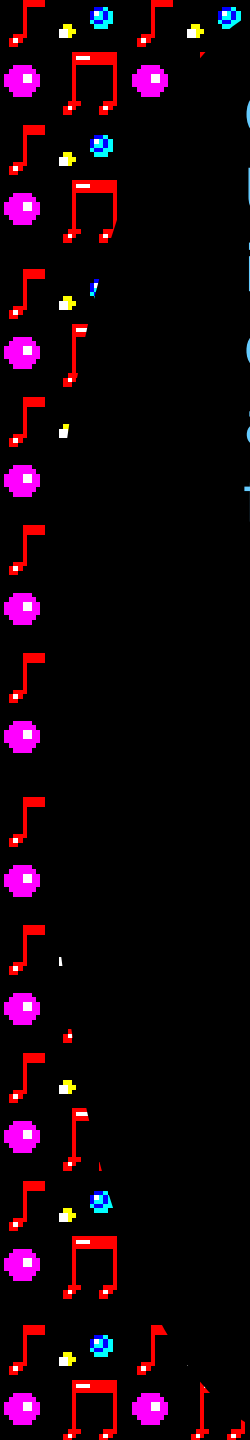
Sinonasal

Case 2



Sinonasal

Case 2



Case 2: A 34 year old man emigrated to the United States a few years ago. He visits his internist because of progressive nasal obstruction. On examination both nasal cavities are filled with fleshy pink polypoid lesions arising from the septum and lateral nasal wall.

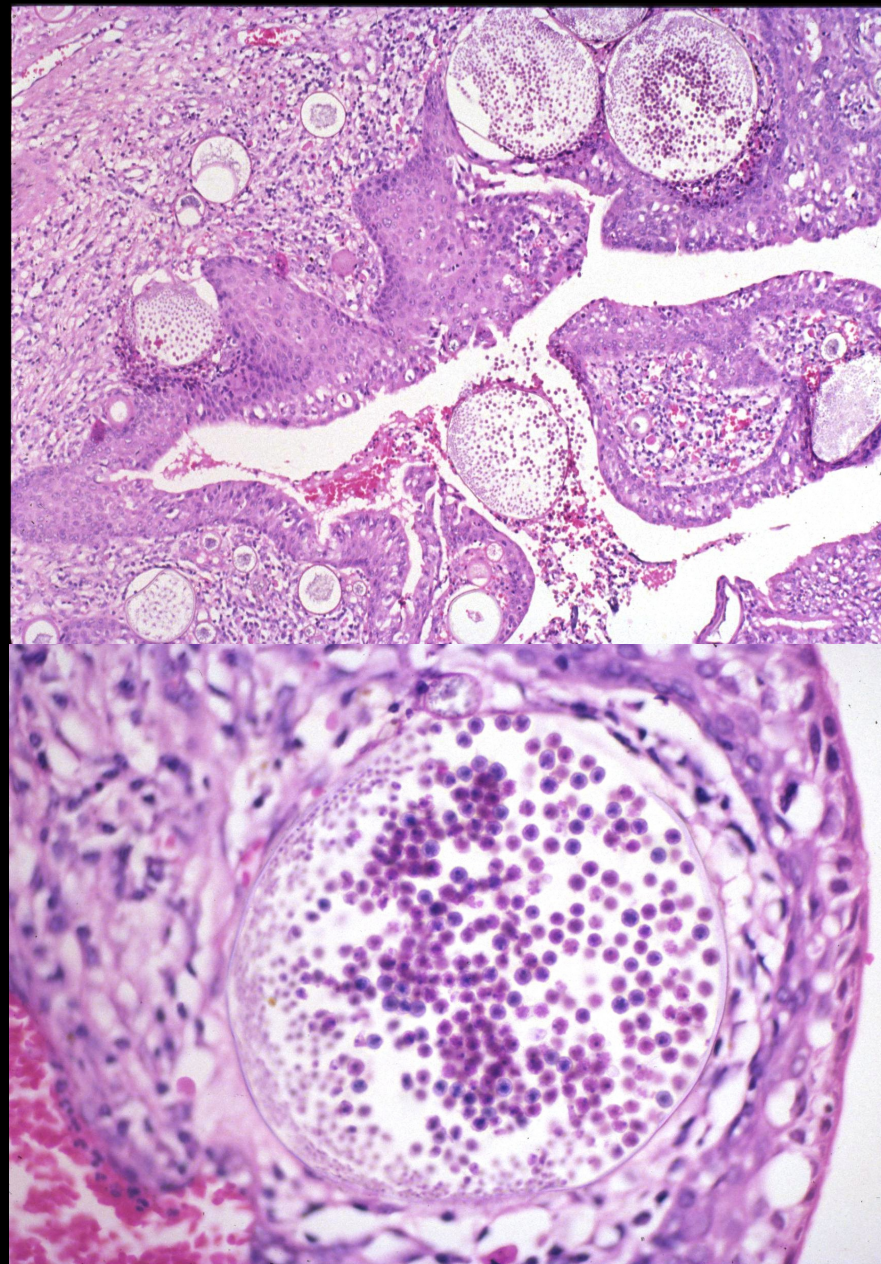
Which of the following statements are true of this lesion?

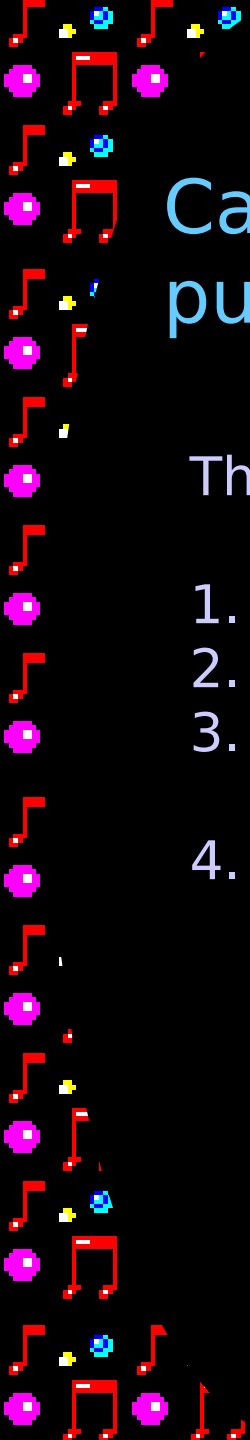
1. It is seen most often in patients in Northern Europe.
2. It may occur anywhere in the upper aerodigestive tract.
3. It is a neoplastic process and has a high rate of recurrence.
4. Antibiotic therapy is not effective.

Answer: C

Case 2: RHINOSPORIDIOSIS

Rhinosporidiosis is an infectious disease caused by *Rhinosporidium seeberi*, which is thought to be a fungus. It is endemic in India, Sri Lanka, and Brazil. It is thought to be zoonotic. Nasal cavity is the most common site, but it may occur in nasopharynx, larynx, tracheobronchial tree, esophagus, conjunctiva, and ear. Characteristic histologic features: very large sporangia containing endospores. They are MUCH larger than *Coccidioides immitis* and are obvious from low power. Treatment is surgical; antibiotics are not effective.

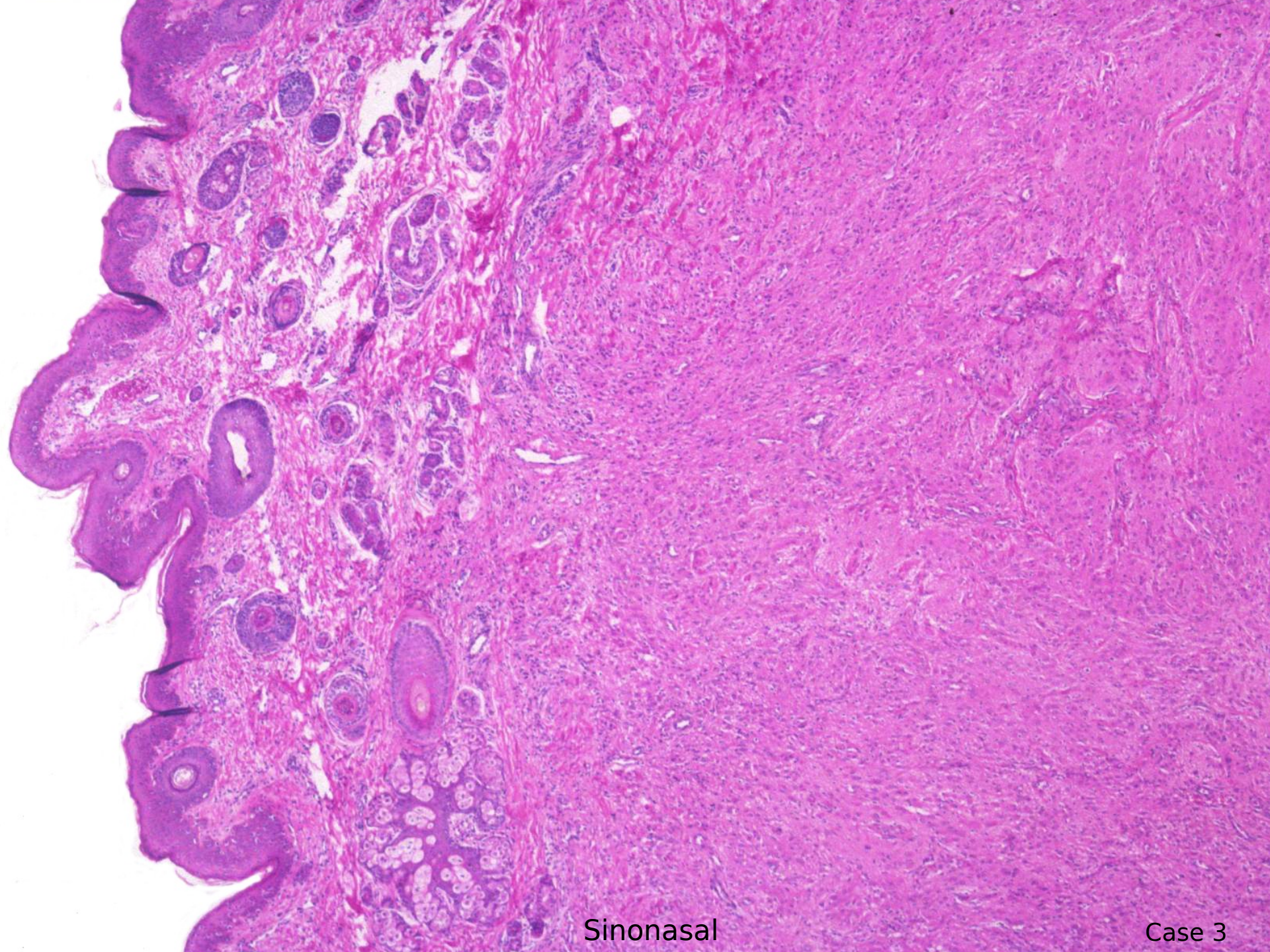




Case 3: A two year old female has a purplish nodule on the bridge of her nose.

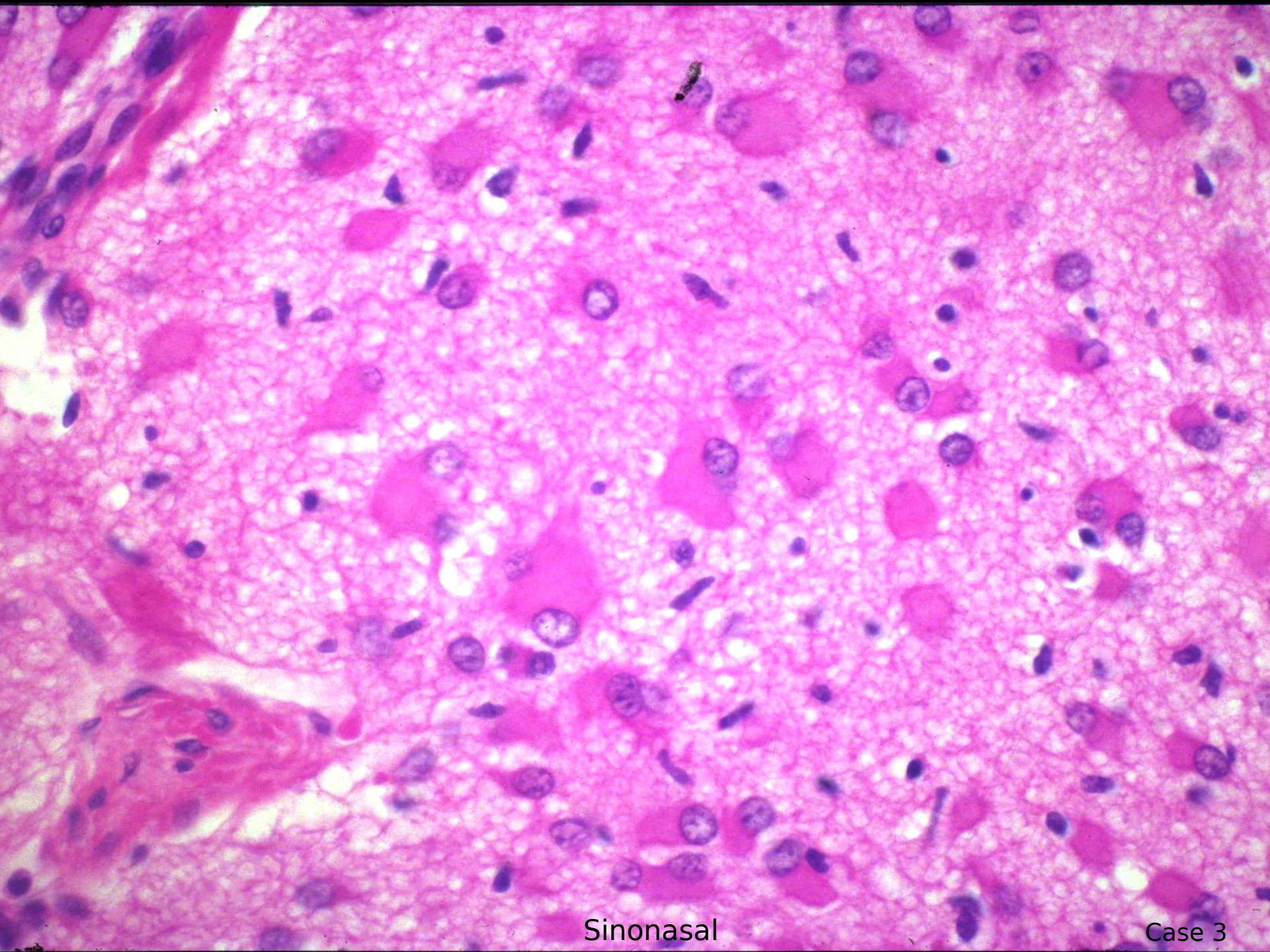
The following statements are true of this lesion:

1. It is neoplastic.
2. The large cells seen in the slides are neurons.
3. Most cases are associated with an intranasal component as well as the extranasal component.
4. It is distinguished from encephalocele by the lack of a radiographic communication with the CNS.



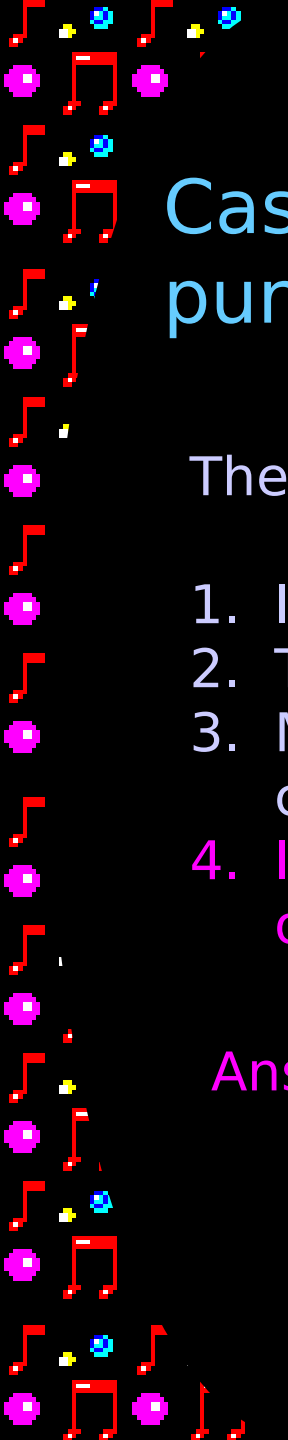
Sinonasal

Case 3



Sinonasal

Case 3



Case 3: A two year old female has a purplish nodule on the bridge of her nose.

The following statements are true of this lesion:

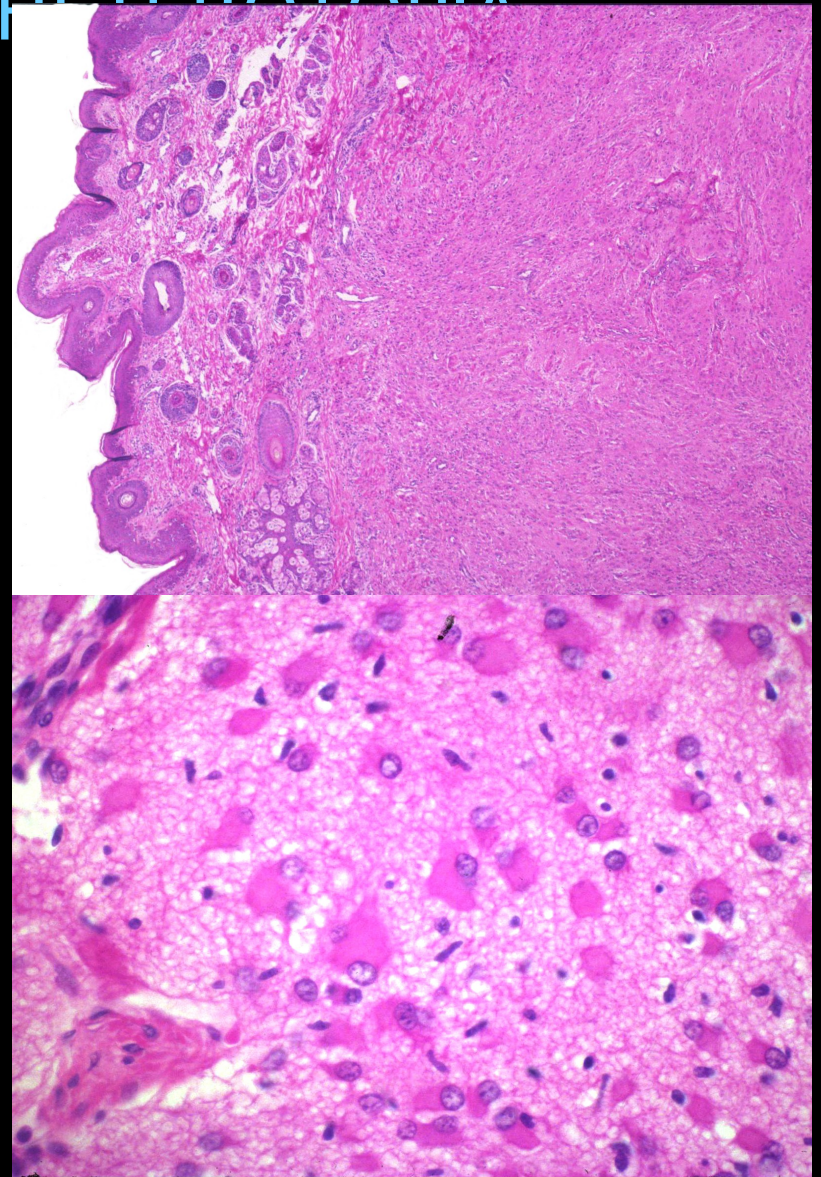
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4. It is distinguished from encephalocele by the lack of a radiographic communication with the CNS.

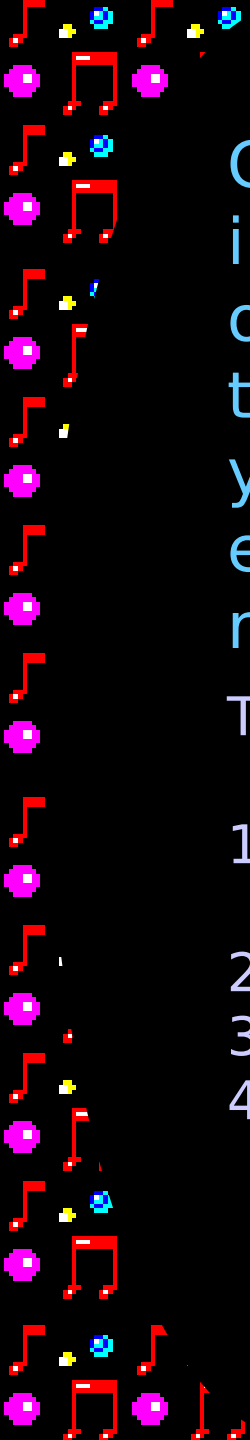
Answer: D

Case 3: NASAL GLIAL HETEROTOPIA (NASAL GLIOMA)

Nasal glioma is a heterotopia of neuroglial tissue, composed almost exclusively of astrocytes and glial fibers (neurons are sparse). 60% are extranasal; 30% are intranasal; and 10% are mixed extra- and intranasal.

The chief differential consideration is encephalocele, which must be distinguished from glial heterotopia by the presence of a communication with the CNS in encephalocele. This is done radiographically; the clinician should be notified immediately if one sees this lesion so that encephalocele can be excluded quickly.

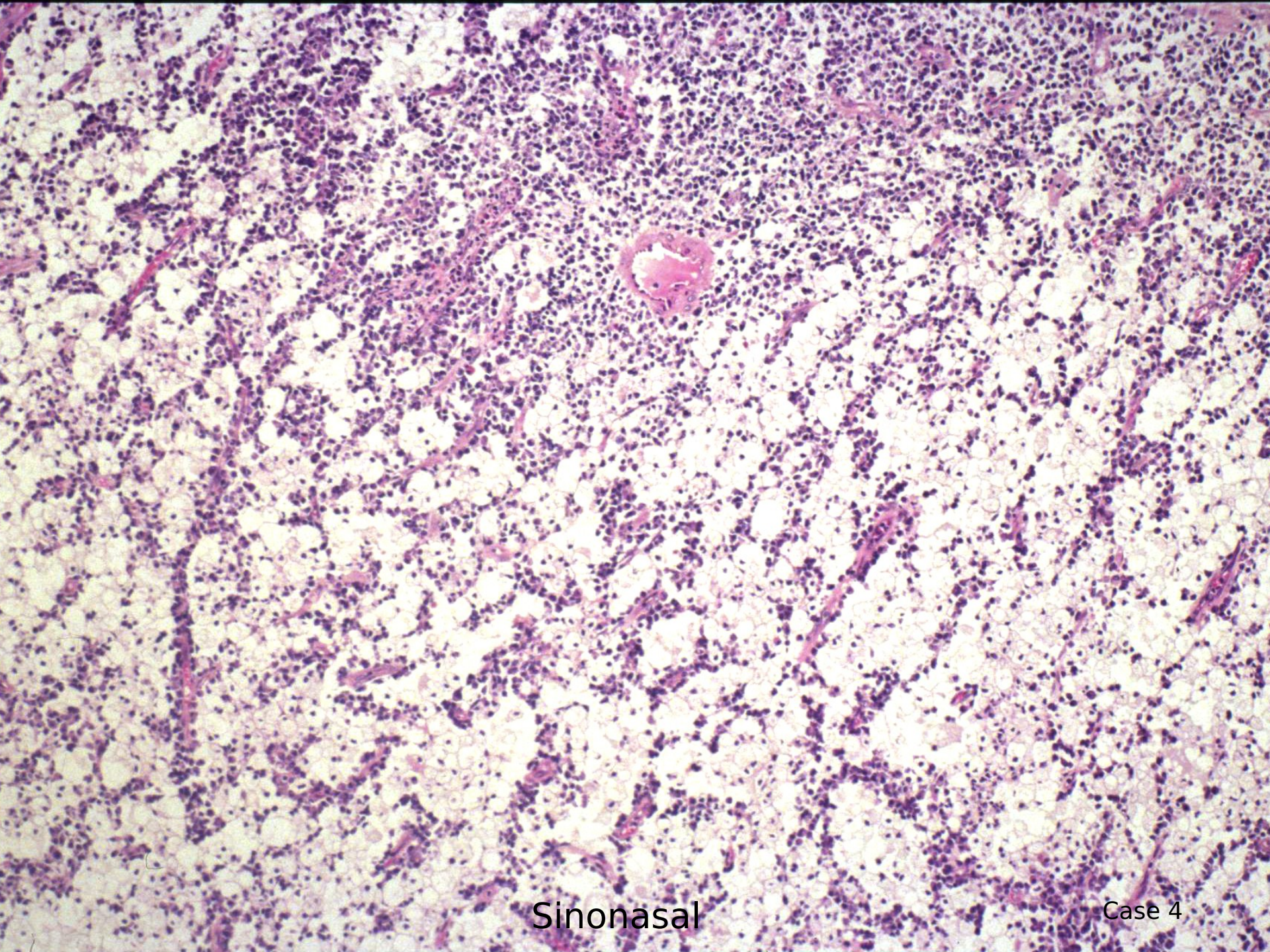




Case 4: An Egyptian woman is visiting relatives in the US. She has had progressive nasal obstruction to the point that she has to breathe through her mouth. Her sister brings her in to your office. On examination the nasal mucosa is extremely thick and boggy, with little space remaining in the nasal cavity.

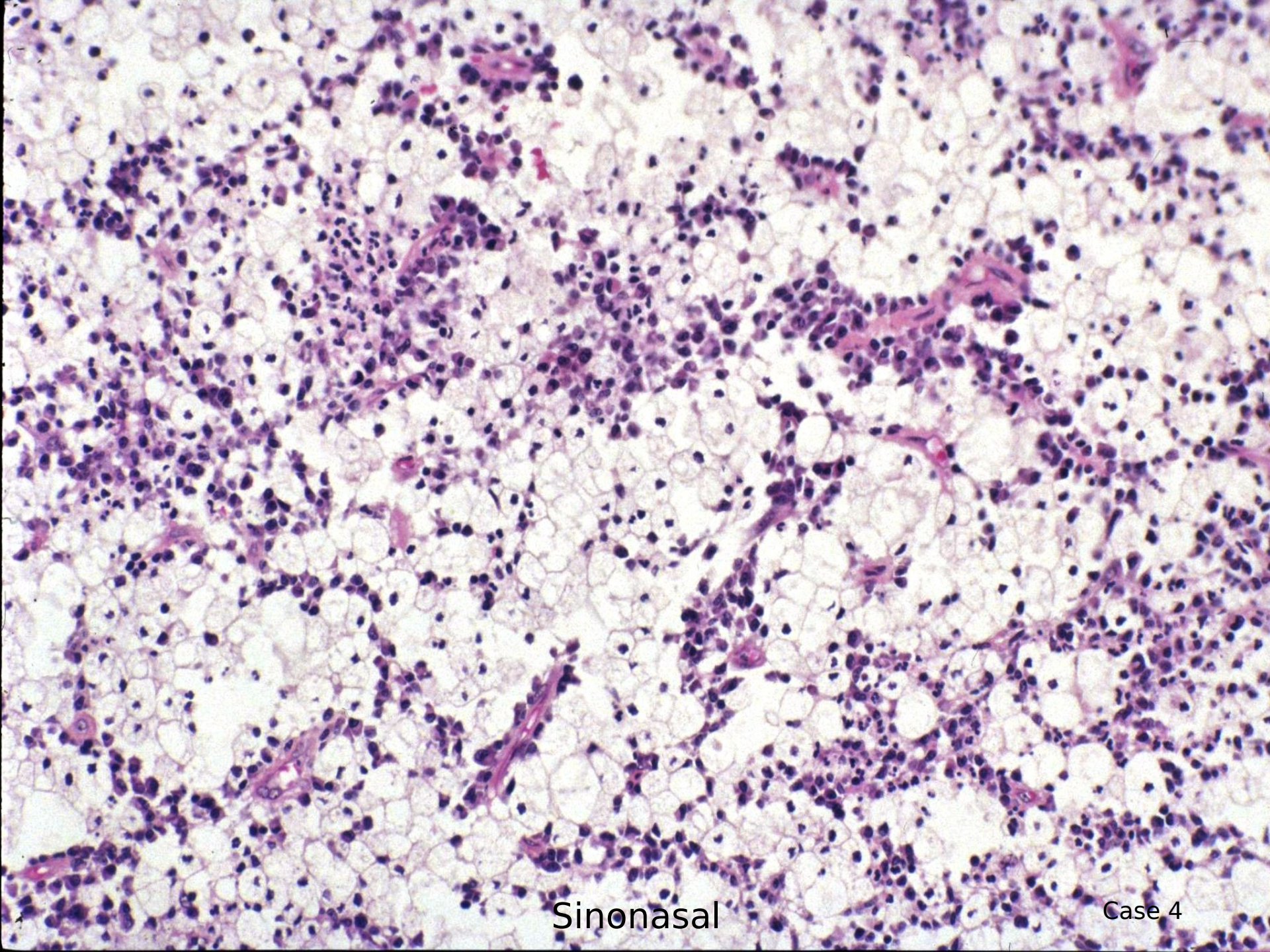
The following statements are true of this lesion:

1. Endemic in Egypt, Central and South America, and North and Central Africa.
2. Endemic in Eastern Europe.
3. Tetracycline is the treatment of choice.
4. *Chlamydia rhinoscleromatis* is the causative agent.



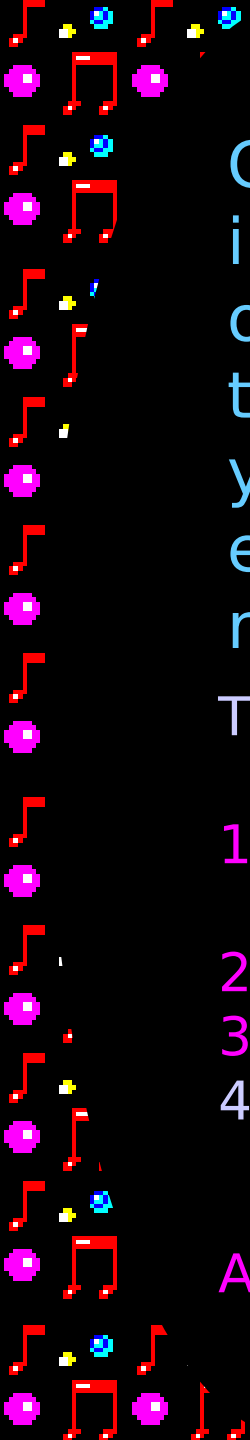
Sinonasal

Case 4



Sinonasal

Case 4



Case 4: An Egyptian woman is visiting relatives in the US. She has had progressive nasal obstruction to the point that she has to breathe through her mouth. Her sister brings her in to your office. On examination the nasal mucosa is extremely thick and boggy, with little space remaining in the nasal cavity.

The following statements are true of this lesion:

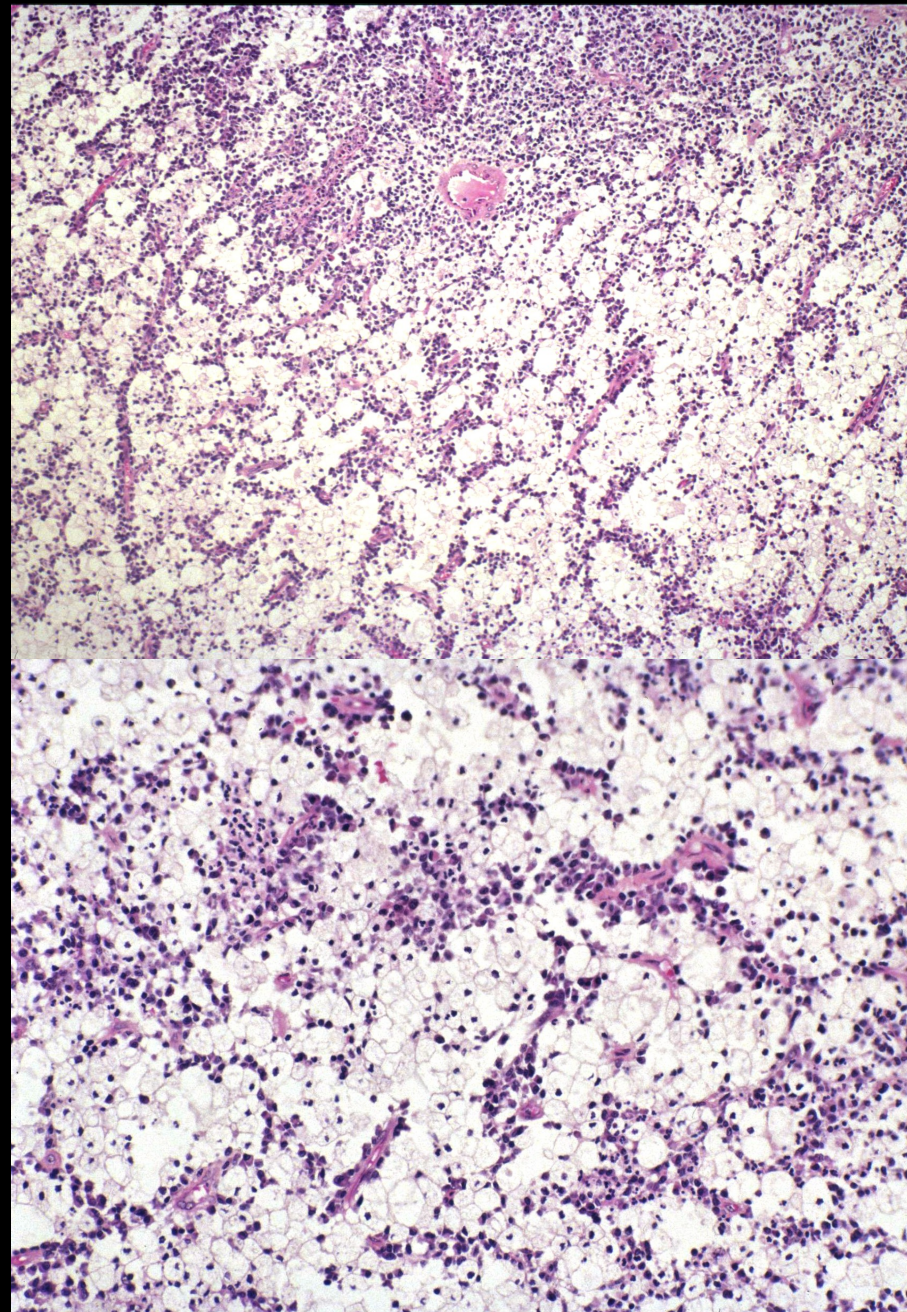
1. Endemic in Egypt, Central and South America, and North and Central Africa.
2. Endemic in Eastern Europe.
3. Tetracycline is the treatment of choice.
4. *Chlamydia rhinoscleromatis* is the causative agent.

Answer: A

Case 4: RHINOSCLEROMA

Rhinoscleroma is endemic in Egypt, North and Central Africa, portions of Central and South America, and Eastern Europe. It is predominantly seen in lower socioeconomic groups probably due to malnutrition and poor living conditions. The etiology is *Klebsiella rhinoscleromatis*.

The illness begins as an acute rhinitis, followed by a florid proliferative phase with nasal obstruction. The end phase is fibrotic, with atrophy of the mucosa. If nasal obstruction is serious surgical treatment may be necessary, but tetracycline is the treatment of choice. Look for the clear to foamy histiocytes- Mikulicz cells. Warthin-Starry silver stain is excellent for demonstrating the organisms.



Sinonasal

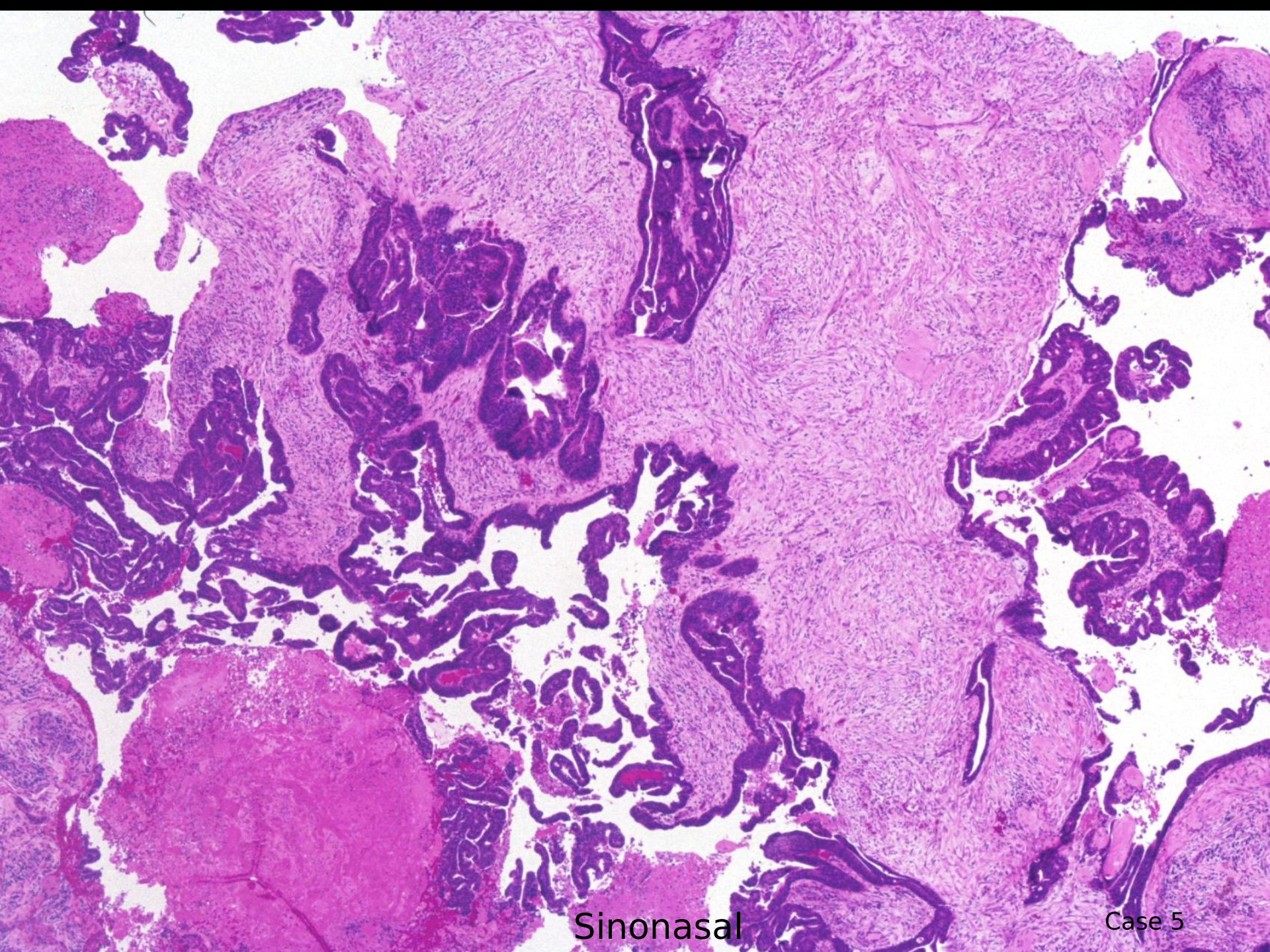
Case 4



Case 5: A 62 year old male from North Carolina has worked in a furniture factory for most of his adult life. He has noticed unilateral nasal obstruction which he attributes to “sinus problems” for several months. Last week he had several heavy nosebleeds. You find a friable mass in the right nasal cavity.

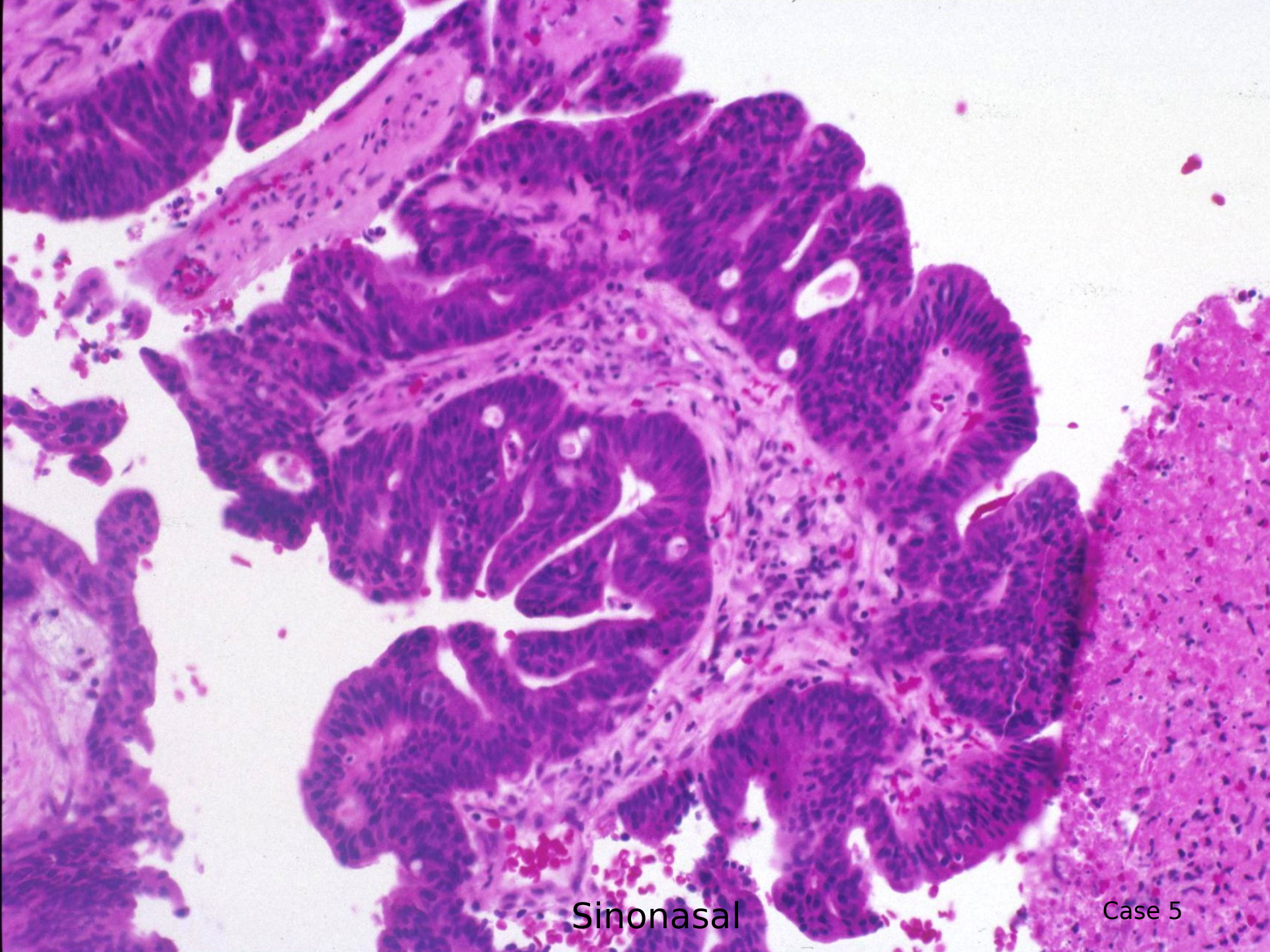
The following statements are true of this lesion:

1. It is a low-grade malignant neoplasm with a propensity for local recurrence but it does not metastasize.
2. It is more common in women than in men.
3. The 3 year survival rate is over 90%.
4. An association with occupations in the furniture and leather industries has been documented.



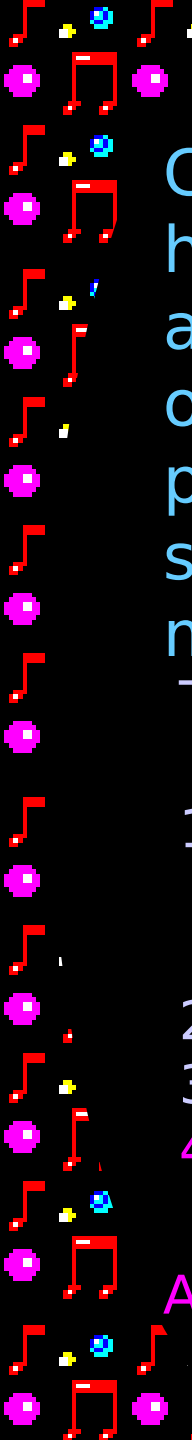
Sinonasal

Case 5



Sinonasal

Case 5



Case 5: A 62 year old male from North Carolina has worked in a furniture factory for most of his adult life. He has noticed unilateral nasal obstruction which he attributes to “sinus problems” for several months. Last week he had several heavy nosebleeds. You find a friable mass in the right nasal cavity.

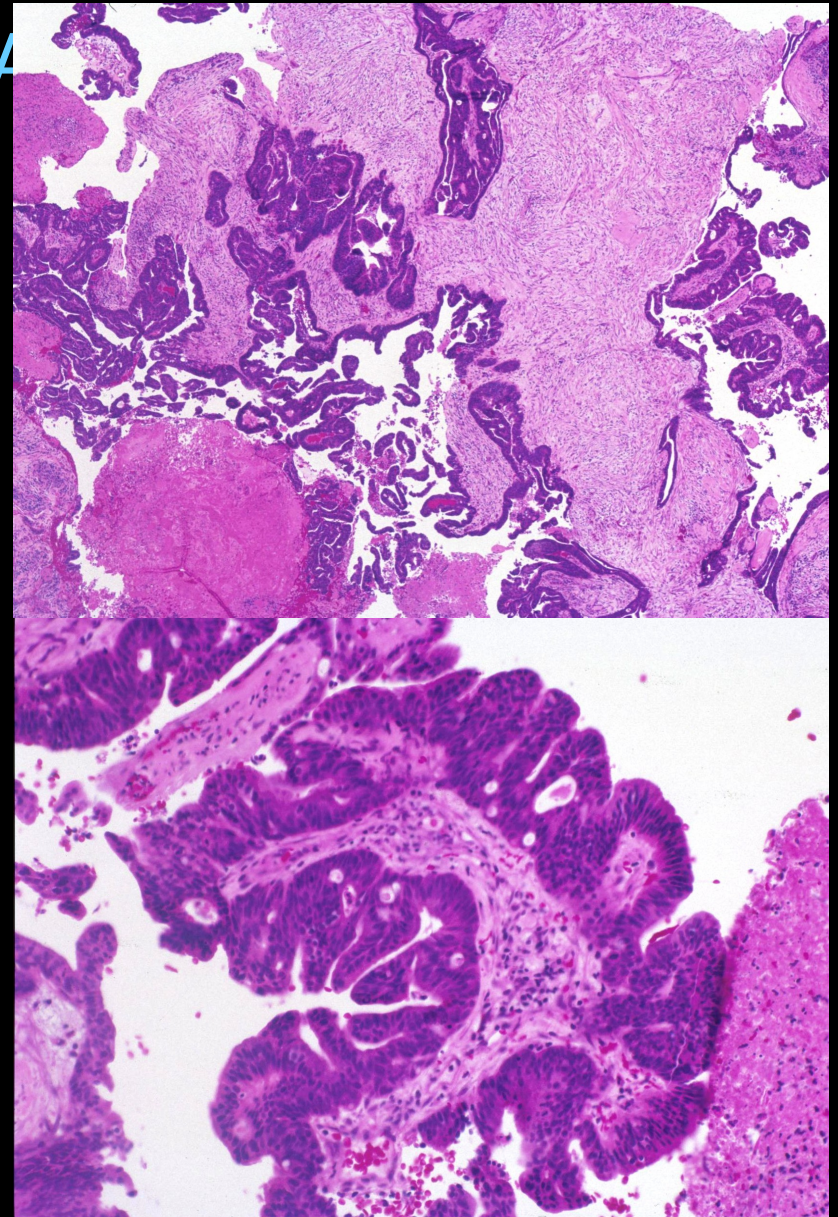
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3. The 3 year survival rate is over 90%.
4. An association with occupations in the furniture and leather industries has been documented.

Answer: D

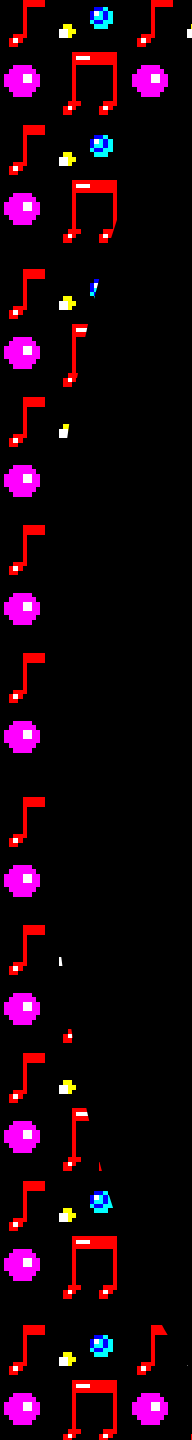
Case 5: SINONASAL ADENOCARCINOMA

The intestinal types of adenocarcinoma are all high grade tumors with a high rate of death from local or regional recurrences and metastasis. These tumors are more common in men and may be associated with exposure to dust and chemicals used in processing wood and leather. The intestinal types of adenocarcinoma look like various types of colon carcinoma, including tubulopapillary, mucinous, and signet ring types.



Sinonasal

Case 5



Case 6: A 17 year old male has had a stuffy nose and headaches for 4 months. Now he presents after several episodes of epistaxis which caused his mother alarm. There is a firm rubbery polypoid mass high in the nasal cavity.

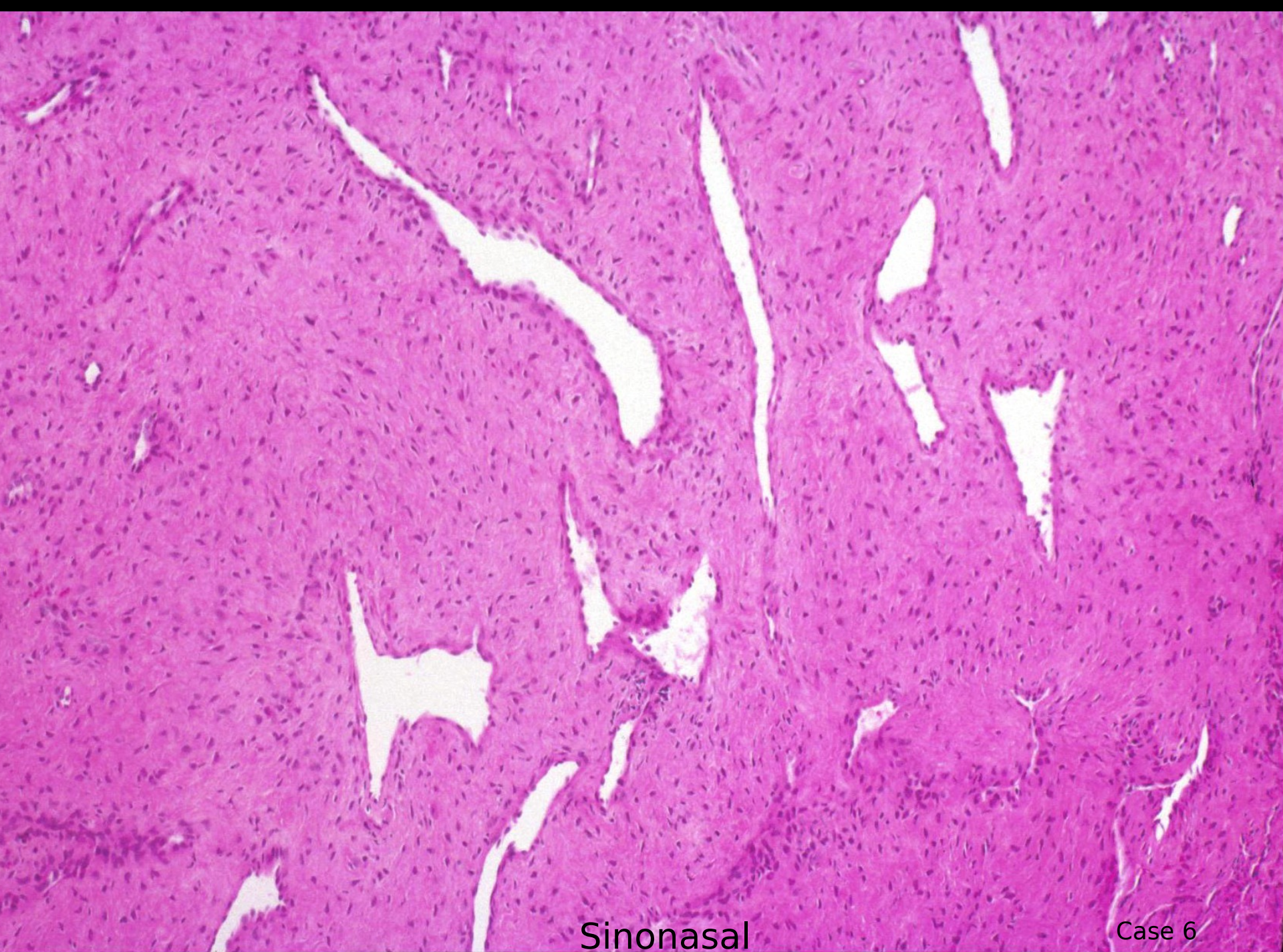
Which of the following statements are true of this lesion?

1. It occurs only in males.
2. It arises in the posterior nasopharynx usually
3. Surgery is the treatment of choice.
4. The mortality rate is around 5%.



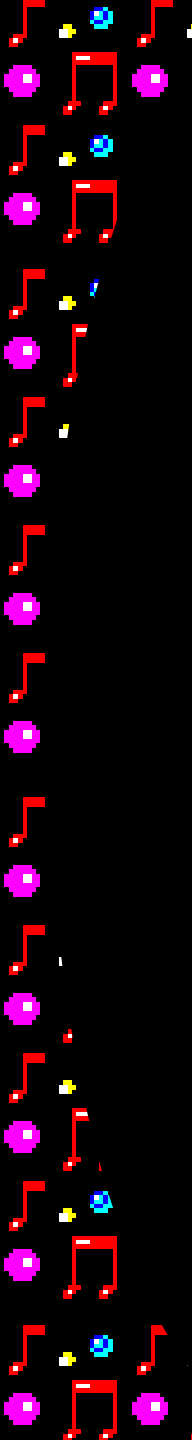
Sinonasal

Case 6



Sinonasal

Case 6



Case 6: A 17 year old male has had a stuffy nose and headaches for 4 months. Now he presents after several episodes of epistaxis which caused his mother alarm. There is a firm rubbery polypoid mass high in the nasal cavity.

Which of the following statements are true of this lesion?

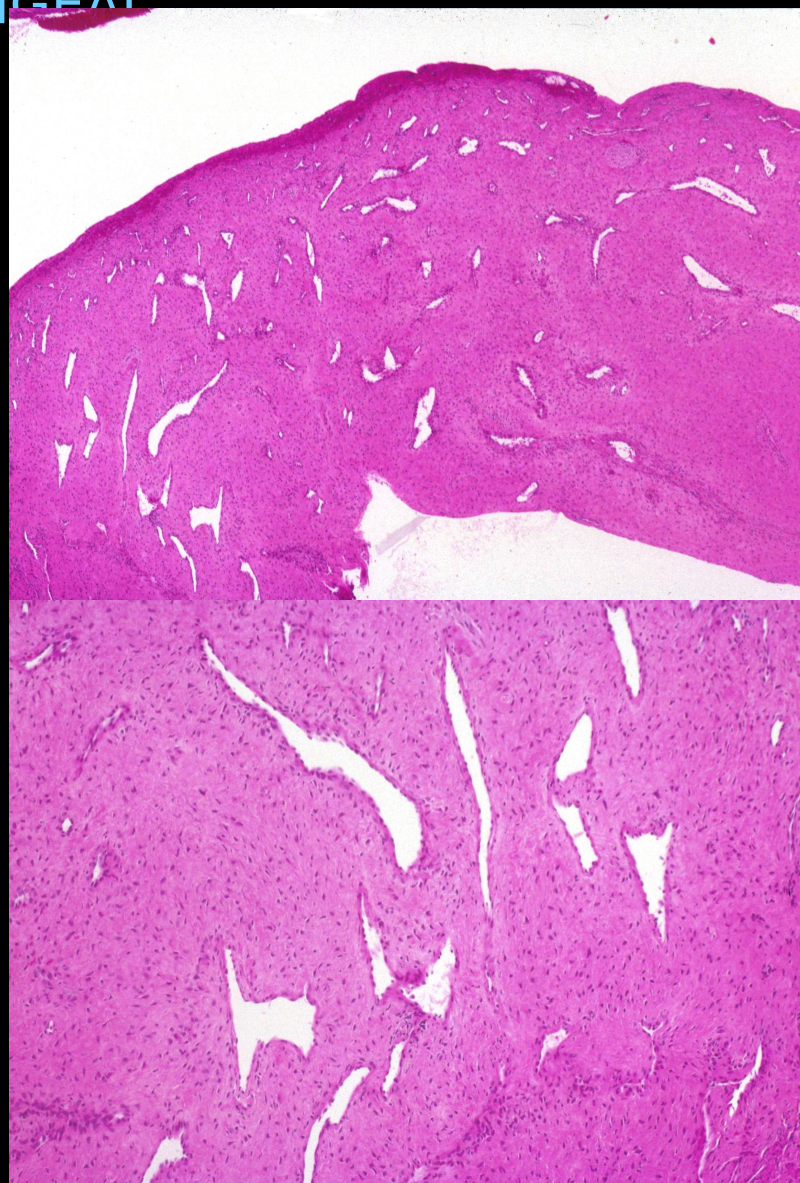
1. It occurs only in males.
2. It arises in the posterior nasopharynx usually
3. Surgery is the treatment of choice.
4. The mortality rate is around 5%.

Answer: E

Case 6: JUVENILE NASOPHARYNGEAL ANGIOFIBROMA

JNAF is a vascular neoplasm which is seen exclusively in males. It is usually diagnosed in adolescent or very young adults, and is associated with nasal obstruction and epistaxis. It usually arise high in the posterior nasopharynx, but may fill sinuses and the nasal cavity.

Although this lesion is benign, it may be locally destructive, with intracranial extension and may lead to death if unresectable. Surgery is the best treatment. The histologic features include gaping thin walled vessels in a fibrous background with scattered stellate fibroblastic cells.

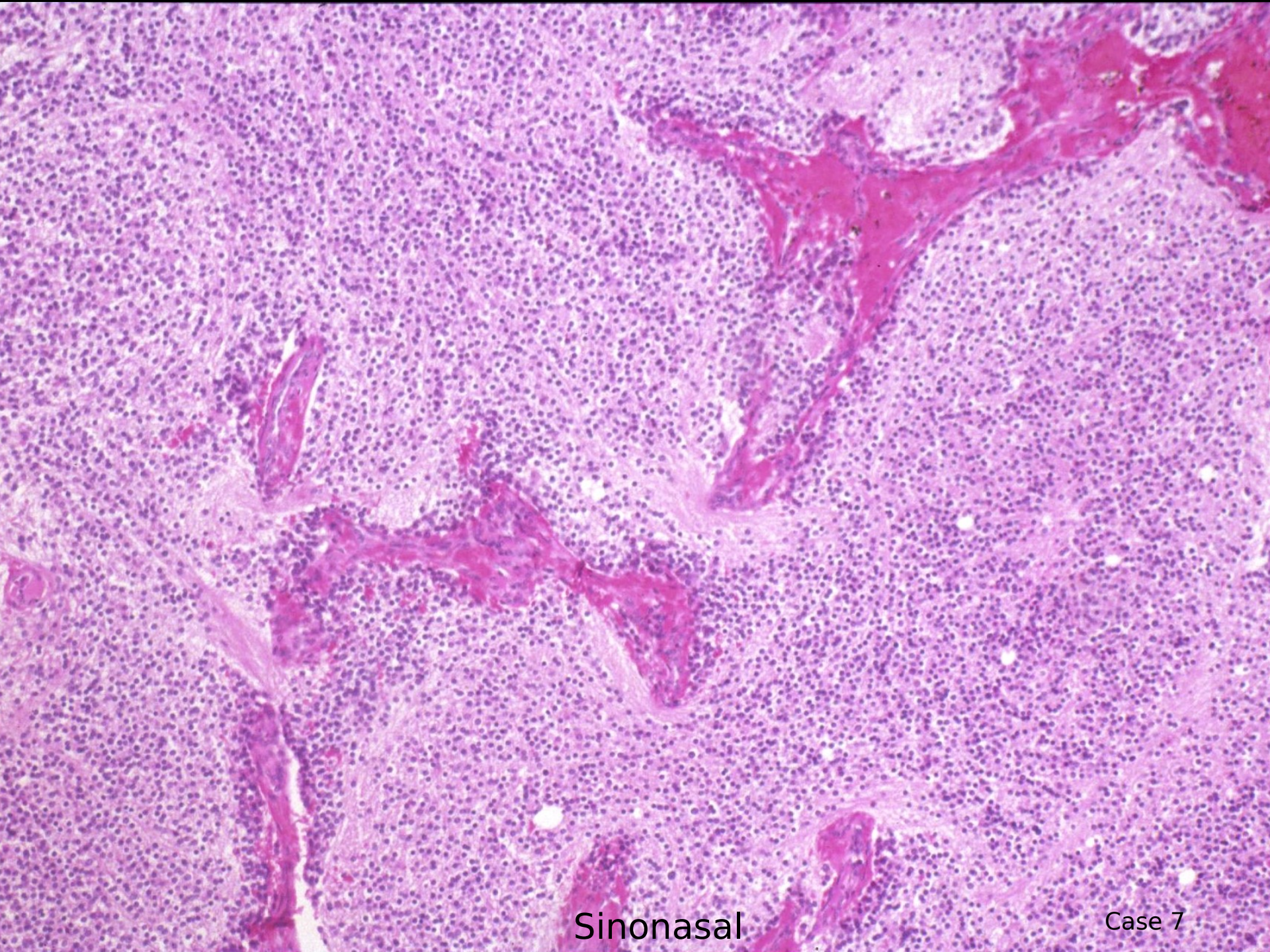




Case 7: A 10 year old female has unilateral nasal obstruction, headaches, and epistaxis. A polyoid friable mass is seen in the nasal cavity.

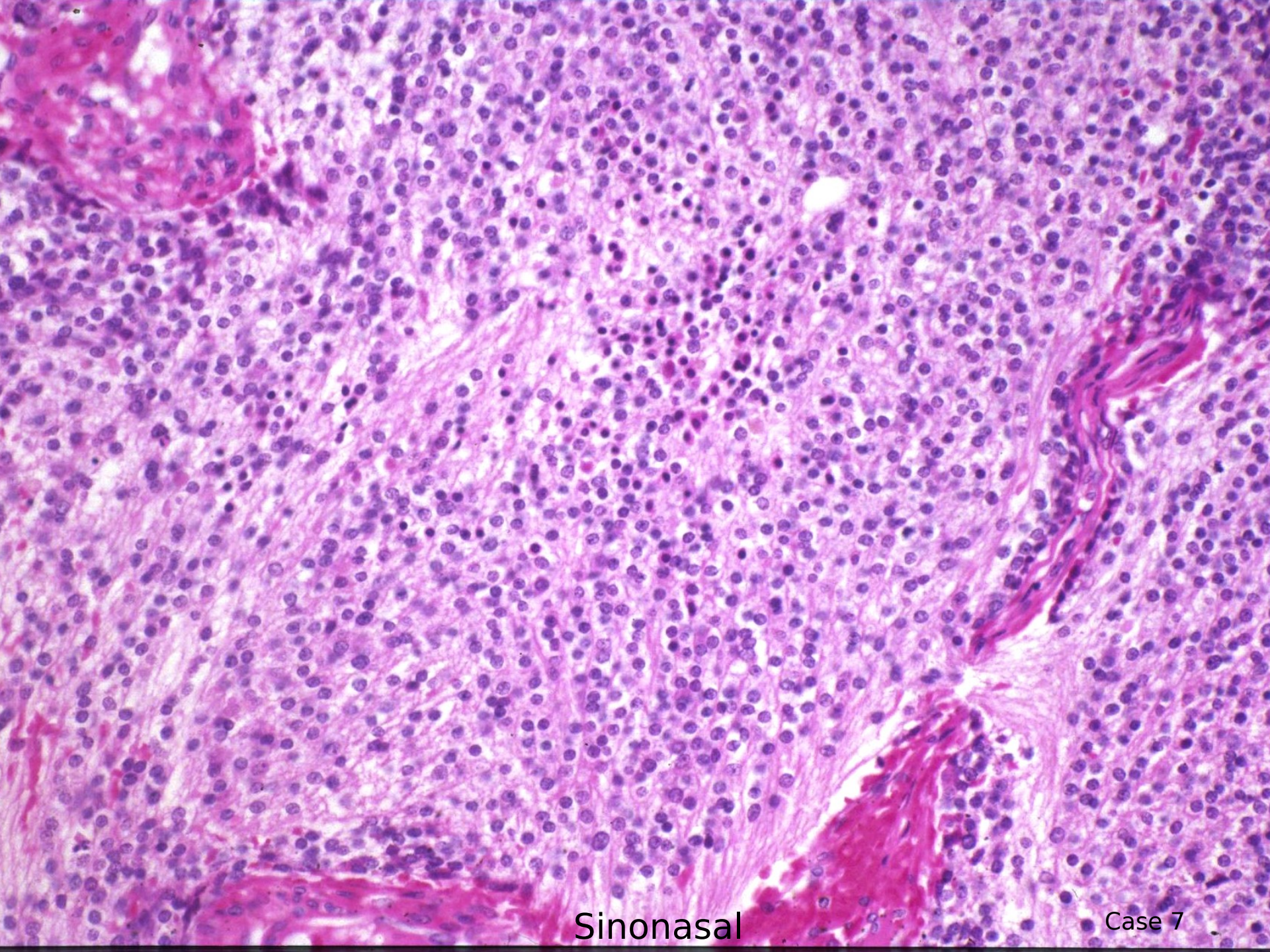
The following statements are true of this lesion:

1. A bimodal age distribution is seen, with peaks in the second and 6th decades.
2. Local control is more often a problem than metastatic disease.
3. Tumor grade and extent of tumor correlate with prognosis.
4. Radical surgery with adjuvant radiation is the preferred treatment.



Sinonasal

Case 7



Sinonasal

Case 7



Case 7: A 10 year old female has unilateral nasal obstruction, headaches, and epistaxis. A polyoid friable mass is seen in the nasal cavity.

The following statements are true of this lesion:

1. A bimodal age distribution is seen, with peaks in the second and 6th decades.
2. Local control is more often a problem than metastatic disease.
3. Tumor grade and extent of tumor correlate with prognosis.
4. Radical surgery with adjuvant radiation is the preferred treatment.

Answer: E

Case 7: ESTHESIONEUROBLASTOMA

Esthesioneuroblastoma arises from the olfactory membrane and usually originates in the upper nasal cavity, with cribriform plate involvement being characteristic. Locally destructive growth is usually more problematic than metastatic disease, which only occurs in 20-40% of cases (this is probably a high estimate).

The histologic features include small round, lymphocyte-like nuclei in a meshwork of neurofibrillary material (cobweb-like). The higher grades of ONB are harder to recognize as ONB because they have higher cellularity, more atypia, and less neurofibrillary material.

